<u>**AMENDMENTS IN THE CLAIMS**</u>

Please amend the claims as follows:

1. (cancelled)

2. (currently amended) An interferometric method for measuring, said method comprising:

generating a first coherent light beam and a second coherent light beam;

reflecting at least said first coherent light beam from a first region into a first return beam and reflecting said second coherent light beam from a second region into a second return beam;

measuring at least a first reflectivity of said first region;

determining a topography-dependent phase shift of said first return beam and said second return beam based on said first reflectivity;

measuring a height based on said topography-dependent phase shift;

comparing said first reflectivity and a second reflectivity of said second region; [[and]]

using a total phase shift of said first return beam and said second return beam for said height measurement, if said first reflectivity and said second reflectivity are equal[[.]]<u>; and</u>

<u>outputting said height measurement.</u>

3. (previously presented) The method of claim 2, wherein the topography-dependent phase shift is determined based on an optical property of an area covered by said first region.

4. (previously presented) The method of claim 2, wherein said determining step further comprises determining the topography-dependent phase shift with reference to a curve relating said first reflectivity to a material-dependent phase shift.

5. (previously presented) The method of claim 2, wherein said determining step further comprises employing a reflectivity of a second region on a reference surface having known optical properties.

6. (previously presented) The method of claim 2, wherein said determining step further comprises measuring a second reflectivity of a second region on said first surface; and

determining the topography-dependent phase shift based on said first reflectivity and said second reflectivity.

7. (previously presented) The method of claim 2, wherein said determining step further comprises determining a fringe visibility for use in determining said topography-dependent phase shift.

8. (previously presented) The method of claim 2, wherein said determining step further comprises determining a topography dependent phase shift through mathematical relationships, comprising:

$$\Delta\varphi_h = \Delta\varphi_T - \Delta\varphi_m;$$
$$\Delta\varphi_m = \arcsin(\alpha\beta);$$
$$\alpha = \frac{r_1 r_2 \sin(\varphi_2 - \varphi_1)}{\left|(r_1)^2 - (r_2)^2\right|};$$
$$\beta = \frac{1}{2V}\frac{(R_1)^2 - (R_2)^2}{(R_1)^2 + (R_2)^2};$$

wherein:

$\Delta\varphi_h$ is a topography - dependent_phase_shift;

$\Delta\varphi_T$ is a total _ phase _ shift;

$\Delta\varphi_m$ is a material - dependent_phase_shift;

r_1 is a reflection _ coefficient _ of _ first _ area;

r_2 is a reflection _ coefficient _ of _ second _ area;

φ_1 is a phase _ shift _ caused _ by _ reflection _ from _ first _ area;

φ_2 is a phase _ shift _ caused _ by _ reflection _ from _ second _ area;

R_1 is a reflectivity _ of _ first _ region;

R_2 is a reflectivity _ of _ second _ region; and

V is a fringe _ visibility.

9. (previously presented) The method of claim 2, wherein:

the determining step further comprises calculating a material-dependent phase shift based on a first optical property, a second optical property, and a first reflectivity of a first region; and

the determining step further comprises determining a topography-dependent phase shift by subtracting a material-dependent phase shift from a total phase shift of a first reflected coherent light beam and a second reflected coherent light beam.

10. (cancelled)

11. (cancelled)

12. (cancelled)

13. (cancelled)

14. (cancelled)

15. (cancelled)

16. (cancelled)

17. (cancelled)

18. (cancelled)

19. (cancelled)

20. (previously presented) An interferometer for measuring height, said interferometer comprising:

means for generating a first coherent light beam and a second coherent light beam;

means for reflecting at least said first coherent light beam from a first region into a first return beam and reflecting said second coherent light beam from a second region into a second return beam;

means for measuring at least a first reflectivity of said first region;

means for determining a topography-dependent phase shift of said first return beam and said second return beam based on said first reflectivity;

means for measuring a height based on said topography-dependent phase shift;

means for comparing said first reflectivity and a second reflectivity of said second region; and

means for using a total phase shift of said first return beam and said second return beam for said height measurement, if said first reflectivity and said second reflectivity are equal.

21. (previously presented) The interferometer of claim 20, wherein said means for determining said topography-dependent phase shift further comprise means for determining said topography-dependent phase shift based on an optical property of an area covered by said first region.

22. (previously presented) The interferometer of claim 20, wherein said determining means further comprise means for determining said topography-dependent phase shift with reference to a curve relating said first reflectivity to a material-dependent phase shift.

23. (previously presented) The interferometer of claim 20, wherein said determining means further comprise means for employing a reflectivity of a second region on a reference surface having known optical properties,

24. (previously presented) The interferometer of claim 20, wherein said determining means further comprise means for measuring a second reflectivity of a second region on said first surface; and

means for determining the topography-dependent phase shift based on said first reflectivity and said second reflectivity.

25. (previously presented) The interferometer of claim 20, wherein said determining means further comprise means for determining a fringe visibility for use in determining said topography-dependent phase shift.

26. (previously presented) The interferometer of claim 20, wherein said determining means further comprise means for determining a topography dependent phase shift through mathematical relationships, comprising:

$$\Delta\varphi_h = \Delta\varphi_T - \Delta\varphi_m;$$
$$\Delta\varphi_m = \arcsin(\alpha\beta);$$
$$\alpha = \frac{r_1 r_2 \sin(\varphi_2 - \varphi_1)}{\left|(r_1)^2 - (r_2)^2\right|};$$
$$\beta = \frac{1}{2V}\frac{(R_1)^2 - (R_2)^2}{(R_1)^2 + (R_2)^2};$$
wherein :

$\Delta\varphi_h$ is a topography - dependent_phase_shift;

$\Delta\varphi_T$ is a total _ phase _ shift;

$\Delta\varphi_m$ is a material - dependent_phase_shift;

r_1 is a reflection _ coefficient _ of _ first _ area;

r_2 is a reflection _ coefficient _ of _ second _ area;

φ_1 is a phase _ shift _ caused _ by _ reflection _ from _ first _ area;

φ_2 is a phase _ shift _ caused _ by _ reflection _ from _ second _ area;

R_1 is a reflectivity _ of _ first _ region;

R_2 is a reflectivity _ of _ second _ region; and

V is a fringe _ visibility.

27. (previously presented) The interferometer of claim 20, wherein:

the determining means further comprise means for calculating a material-dependent phase shift based on a first optical property, a second optical property, and a first reflectivity of a first region; and

the determining means further comprise means for determining a topography-dependent phase shift by subtracting a material-dependent phase shift from a total phase shift of a first reflected coherent light beam and a second reflected coherent light beam.